

## CLAIMS

What is claimed is:

1. Method of probing an electronic component, the method comprising contacting the electronic component with a plurality of spring contact elements, characterized in that:
  - 5 providing a relatively large substrate which is as large as a testable area of the electronic component desired to be probed, said large substrate having a front surface; and
  - mounting and connecting a plurality of at least two
  - 10 contact carriers to the front surface of the large substrate, each contact carrier having a plurality of spring contact elements extending from a surface thereof; and
  - urging the large substrate and the electronic component towards one another so that the spring contact
  - 15 elements make contact with the electronic component.
2. Method, according to claim 1, characterized in that:  
the electronic component is a semiconductor wafer.
3. Method, according to claim 2, characterized in that:  
the testable area is a plurality of die sites on the  
20 semiconductor wafer; and  
the spring contacts make contact with the plurality of die sites all at once.
4. Method, according to claim 1, characterized in that:  
the testable area of the electronic component is at  
25 least half of an overall surface area of the electronic component.
5. Method, according to claim 1, characterized in that:  
the electronic component is a printed circuit board.

6. Method, according to claim 1, characterized in that:  
the electronic component is a liquid crystal display  
panel.
7. Method, according to claim 1, characterized in that:  
the spring contact elements are probe elements.
8. Method, according to claim 1, characterized in that:  
the spring contact elements are composite  
interconnection elements.
9. Method, according to claim 1, characterized in that:  
the spring contact elements are contact bumps disposed  
on a membrane.
10. Method, according to claim 1, characterized by:  
solder connections between the tile substrates and the  
large substrate.
11. Method, according to claim 1, characterized in that:  
the relatively large substrate is a space transformer  
of a probe card assembly.
12. Method, according to claim 1, characterized in that:  
the electronic component is a semiconductor wafer; and  
the spring contact elements of each tile substrate  
contact individual semiconductor dies on the semiconductor wafer  
on a one-to-one basis.
13. Method, according to claim 1, characterized in that:  
the electronic component is a semiconductor wafer; and  
the spring contact elements of each tile substrate  
contact at least two semiconductor dies on the semiconductor  
wafer.

14. Method, according to claim 1, characterized in that:  
the tile substrates are aligned to the large substrate  
by solder joints.

5 15. Method, according to claim 1, characterized in that:  
the large substrate with tile substrates mounted  
thereto is mounted to a probe card.

16. Method, according to claim 1, characterized in that:  
the large substrate with tile substrates mounted  
thereto is mounted to a probe card and is connected to the probe  
10 card by an interposer.

~~Probe~~ Probe card assembly comprising a probe card and a  
plurality of probe elements, characterized by:

15 a space transformer substrate having a top surface,  
a bottom surface, a first plurality of terminals disposed on the  
top surface, and a second plurality of terminals disposed on the  
bottom surface;

at least two tile substrates, each having a top  
surface, a bottom surface;

20 means for effecting electrical connections between the  
tile substrates and the space transformer substrate; and

a plurality of probe elements disposed on the top  
surface of the tile substrates.

18. Probe card assembly, according to claim 17,  
characterized in that:  
25 the probe elements are free-standing spring contacts.

19. Probe card assembly, according to claim 18,  
characterized by:

tip structures mounted to ends of the plurality of  
free-standing spring contacts.

20. Probe card assembly, according to claim 18, characterized in that:

the free-standing spring contacts are composite interconnection elements.

5       21. A tile, adapted in use to be mounted as one of a plurality of tiles to a larger substrate, comprising:

a tile substrate having two opposite surfaces;

spring contacts extending from a one of the two surfaces;

10       solderable terminals on an other of the two opposite surfaces; and

means, within the tile substrate, for connecting the solderable terminals to the spring contacts.